

**AMENDMENTS TO THE DRAWINGS:**

The attached replacement drawing sheets makes changes to Figs. 1-6 and replaces the original sheets with Figs. 1-6.

Attachment: Replacement Sheets

### REMARKS

Reconsideration of the application and allowance of the claims is respectfully requested based upon the preceding amendments and the following remarks. By this Amendment, Figs. 1-6 are amended, the abstract is amended, claims 1, 8, 10, 11, and 17 are amended, and claims 5, 7, and 9 are canceled. Accordingly, claims 1-4, 6-8, 10-14, 16-17, and 20 are pending in this application.

Figs. 2, 4b, and 5 are objected to based upon informalities. Figs. 2, 4b, and 5 are amended to obviate the objections thereto. Specifically, Fig. 2 is amended so that the legend "Java Application Trace or Probabilistic Estimate" is legible, and Figs. 4b and 5 are redrawn so that the horizontal windows have correct borders and do not cross out any instructions and methods. Furthermore, Figs. 1, 3, 4a, and 6 are redrawn to increase the legibility of the elements illustrated. Accordingly, withdrawal of the objection to the drawings is respectfully requested.

The abstract is objected to based upon informalities. In response, the abstract is amended to obviate the objections thereto. Specifically, the abstract was amended to remove legal phraseology and to be in better compliance with commonly accepted US patent practice. Accordingly, withdrawal of the objection to the abstract is respectfully requested.

Claim 8 is objected to based upon minor informalities. Applicants amend claim 8, line 2 to read as "...is dynamically embedded to enable it to...", and claim 11, line 1, to read "~~The method~~A method of generating..." Accordingly, withdrawal of the objection to claims 1 and 11 is respectfully requested.

Claims 1-17 and 20 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 7,080,373 to Plaxton et al. ("Plaxton"). These rejections are respectfully traversed. A rejection based on 35 U.S.C. §102 requires every element of the claim to be included in the reference, either directly or inherently. Applicants respectfully submit that Plaxton fails to disclose all features of the amended claims.

Specifically, claim 1 is amended to recite, *inter alia*, a method of optimizing the performance of an interpreter-based runtime system, comprising:

- 1) "[P]erforming a quantitative trade-off between time and space and encoding semantically

*enriched code based upon the trade-off.”* The subject matter of this element was originally recited in claim 9, and was rejected over Plaxton. Although the Office Action asserts that Plaxton, at column 2, lines 21-58, discloses this feature, Applicants respectfully disagree. At the cited passage, Plaxton appears to only disclose wherein “the pre-internalization process eliminates symbolic references and class loading; reducing dynamic memory storage requirements and speeding up execution of the application.” Nowhere does Plaxton disclose, teach, or suggest a quantitative trade-off being performed between time and space, as recited in amended claim 1.

2) “[A]nalyzing frequently executed codes and encoding semantically enriched codes of the instruction set of the virtual machine to efficiently decode the frequently executed codes.” Although the Office Action asserts that this feature, the subject matter of claim 15, now canceled, is disclosed by Plaxton at column 9, lines 2-8, Applicants respectfully submit that at the cited passage, Plaxton appears to only disclose wherein once the pre-internalized image is created from a source program file, it need not be regenerated should the source program file be selected to run again. Applicants’ method is differentiated from the method of Plaxton in that, unlike Plaxton, claim 1 recites wherein sections of code that appear frequently *within* a program file are detected and new semantically enriched codes are generated for efficient decoding of these frequently executed codes. Nowhere does Plaxton disclose this feature.

3) “[O]ptimizing the virtual machine based on semantics of the application to be run on the virtual machine.” At page 5 of the Office Action, the Office Action asserts that Paxton, at column 6, lines 1-29, discloses this feature. Applicants respectfully disagree. At the cited passage, Plaxton appears to only disclose wherein Virtual Machine 50 may be started in a pre-internalization mode that will pre-internalize the program files into the Virtual Machine’s native memory structure. In other words, Plaxton appears to only disclose compiling source code and storing the compilation in memory so as not to be required to recompile the source code in the future. Nowhere does Plaxton disclose, teach, or suggest an optimization method that is based upon the semantics of the application which is to run on it.

Based upon the above arguments, Applicants respectfully submit that Plaxton fails to disclose all features of amended independent claim 1. Accordingly, claim 1 is allowable over Plaxton.

Independent claims 11 and 17 are amended to include at least one of the elements discussed above, and are therefore similarly allowable.

Claims 2-4, 6-8, 10-14, 16-17, and 20 depend variously from independent claim 1, 11, and 17 and are likewise patentable over Plaxton at least for their dependence on an allowable base claim, as well as for additional recited features. Withdrawal of the rejection over Plaxton is respectfully requested.

All objections and rejections have been addressed. In view of the foregoing, Applicants respectfully submit that the application is in condition for allowance and favorable reconsideration and prompt allowance of claims 1-4, 6-8, 10-14, 16-17, and 20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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